

DATASHEET

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## Multi-point VW Piezometer

Fully grouted installation permits multiple piezometers to be simply and reliably installed in a single borehole



# Multi-point VW Piezometer



## Overview



Fully grouted installation permits multiple piezometers to be simply and reliably installed in a single borehole. The piezometer string and grout pipe are placed in the borehole and cement-bentonite grout is pumped until the borehole is filled.

Multi-point Piezometer Strings allow for multiple Vibrating Wire Piezometers to be connected on a single cable. This facilitates the installation of fully grouted multiple piezometers. The single cable prevents vertical void channels. Tough urethane jacketed, Kevlar® reinforced, non-stretch cable is employed to withstand the rigours of installation and is entirely water-blocked to minimize any leakage. No conductors are shared to maximize independent reliability of each sensor.

Vibrating Wire Piezometers provide excellent long-term accuracy, stability of readings and reliability under demanding geotechnical conditions. Vibrating Wire Piezometers are the electrical piezometers of choice as the frequency output of vibrating wire devices is immune to external electrical noise, and able to tolerate wet wiring common in geotechnical applications.

### APPLICATIONS

Ideal when more than one piezometer reading is needed at various depths at the same location

Assessing performance and investigating stability of earth fill dams & embankments & slope stability

Monitoring of pressures behind retaining walls and diaphragm walls; pore pressures during fill or excavation & pore pressure in land reclamation applications

### FEATURES

No inter-zone leakage

Simple installation

Field proven reliability & accuracy

Will tolerate wet wiring common in geotechnical applications

Immune from external electrical noise

Signal transmission of several kilometres

Cable lengths can be changed without affecting the calibration.

Thermistor for temperature measurement is standard

Negligible displacement of pore water during the measurement process

Hermetically sealed, stainless steel construction

Heavy case to minimise reading errors caused by overburden pressure

Data logger compatible



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## Specifications

### VIBRATING WIRE PIEZOMETER SPECS

The following specifications are for an individual vibrating wire piezometer.

Pressure Range	345, 518, 690 kPa 1, 2, 3.5 MPa
Over range pressure <sup>1</sup>	1.5
Resolution	0.025% FS
Accuracy	± 0.1% FS
Non-Linearity <sup>2</sup>	<0.5% FS
Calibration temperature range	-20 to +80 °C
Thermal effect	<0.05% FS/°C
Diameter x length	20 x 178mm
Weight	240g

<sup>1</sup> The maximum pressure that may be applied continuously without causing damage and maintaining set point repeatability.

<sup>2</sup> ± 0.1% FS available on request.

Materials	316 Stainless Steel
Operating Temp Range	0 to +70°C
Over Voltage Protection	90V Gas Plasma Arrester
Thermistor	3k Ohms @ 25°C
Frequency Range	1850-3500 Hz

### CABLE TYPE

Type 910 Multi-core with Foil Screen & Drain Wire

### READOUT

VWR-1

### ORDERING INFORMATION

Type

Cable Length

Pressure Range

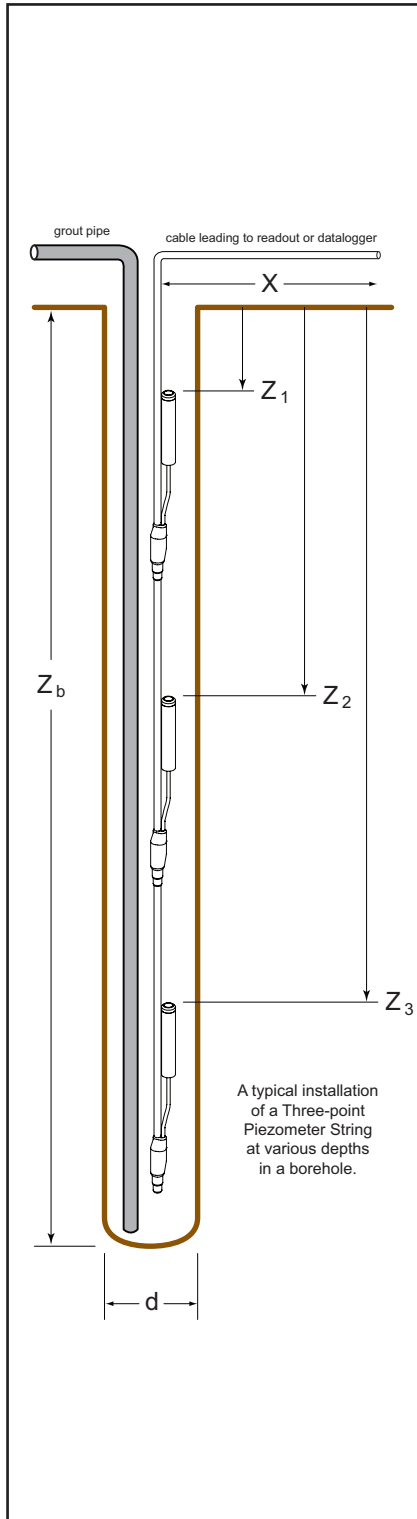
Filter

Cable Type

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## Ordering Information



### PRESSURE RANGES

0.35, 0.7, 1.0, 2.0, 3.0, 5.0, 7.0, and 10.0 MPa  
(Standard model vibrating wire piezometer ranges shown).

### DIMENSIONS

Please provide required lengths (as shown in diagram above) for Z1, Z2, Z3; Zb, Zd and ZX.

### CUSTOM MADE

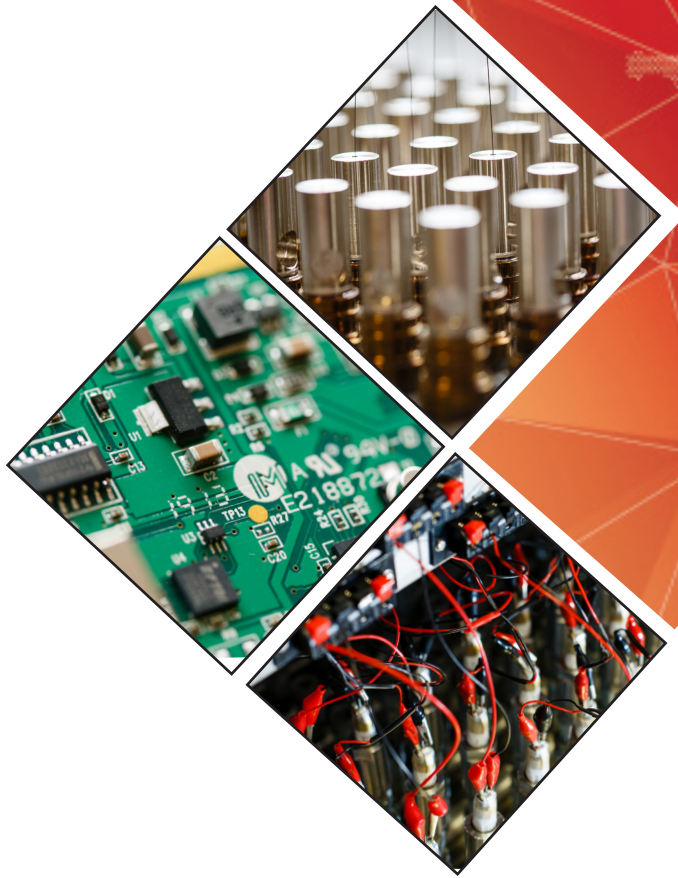
As this product is custom made to suit project specifications, please contact Geosense to discuss your requirements. Details required will include: cable depth, number of piezometers per string and measurement parameters regarding pressure and/or temperature.

### FULLY-GROUTED PIEZOMETERS

Traditionally, multiple piezometer installations in a borehole were slow, complex, and subject to unintended communication between piezometers.

Grouted piezometers are quick and easy to install, have excellent zone isolation, and have rapid response to pore pressure changes.

The fully grouted method is increasingly the preferred standard approach for installing piezometers in boreholes.



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